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THE LIMITS OF ZERO

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I have been surprised recently[1] that there is still some controversy about the validity of the concept of zero in linguistics. There is furthermore little clarity or consistency in the literature on the subject. One might, perhaps, begin with a statement of Bloomfield that any linguistic form 'is any combination of phonemes ..... which has a meaning.'[2] This would imply that, unless a zero phoneme were posited, no zero forms could exist in language. Bloch seems to have followed this when he wrote, listing the special assumptions underlying his treatment of English verb inflection,[3] '(3) One of the alternants of a given morpheme may be zero; but no morpheme has zero as its only alternant. (4) Different morphemes may have one or more alternants (including zero) in common.' A little further on (ibid. 3.1) he lists '/0/(zero)' as an alternant of the third singular.

Whether Bloch is talking about English only or language in general is not clear. Hockett apparently made the latter assumption when he wrote, following Bloch, 'One special criterion is introduced for dealing with zero alternants: no morpheme is postulated which has only a zero alternant.'[4] In much the same vein Lounsbury admits a zero morph, but not morpheme, in an almost inscrutable passage:[5]

> A zero morph is never set up when the meaning to be assigned would be implicated by the selection of a particular allomorph of some one other morpheme. In such cases a portmanteau or included morph is set up instead.

He further (ibid. 1,2,1.) equates zero morphs with 'nothing.'

Some light on the questionable role of zero in linguistics might be gained by an analogy from mathematics. In elementary arithmetic, zero enjoys 'privilege of occurrence' but is otherwise nothing. That is, it exists in the series -3 -2 -1 0 1

2 3 but has no effect at all on the four basic arithmetic operations, addition, subtraction, multiplication and division. If one goes on to exponents, however, and the theory underlying logarithms, one finds that $a^0 = 1$. The proof of this is:

$$a^m \cdot a^n = a^{m+n}$$

$$a^m \cdot a^0 = a^{m+0}$$

$$\underline{\text{or}}\ a^m \cdot a^0 = a^m$$

$$a^0 = 1$$

Another case where zero is a positive entity is in factorial notation, where $0! = 1$. The product of all the positive integers from 1 to n, inclusive, is denoted by the symbol n! A property of factorials is that $n! = n(n-1)!$

That is, $5! = 5 \cdot 4!$ or
$120 = 5 \cdot 24$

If $n = 1$, $1! = 1 \cdot 0!$ or
$0! = 1 \div 1 = 1$

It might be argued (and has been so argued, by mathematicians) that these are fictions or conventions. But what happens if we change them. Let $0! = 0$, say, or $2^0 = 2$. The whole system of factorials or logarithms would collapse. If these are fictions then so is everything else. Any proof, within the system, that the product of two negative numbers is a positive number, which we all take for granted, is doomed to futile circularity and failure. As Hankel said of them:[6] 'It cannot be stressed strongly enough that, in spite of a widespread general opinion, these equations can never be proved in the formal arithmetic; they are arbitrary conventions for the purpose of preserving the formalism in the calculus.' This analogy from the older and wiser science of mathematics ends with a precept which the younger science of linguistics is only half-aware of;

namely (as stated by Waismann[7]), that 'the preservation of the calculating rules governs the concept formation.'

As there are many mathematical systems, each consisting of arbitrary conventions, so there are many linguistic systems, each consisting of arbitrary conventions. One of the most exquisite of these is Turkish. In Turkish the position of primary stress has a fixed and definite relationship to the segmental morphemes. The gerund {(y)En}, for example, always bears the primary stress: /parla-/ 'shine', /parlayán/ 'that which shines.' The primary stress always precedes the morpheme of negation {-mE-}, as, /yaptí/ 'he did', /yápmadı/ 'he didn't', and so forth. In the non-attested past the primary stress directly precedes the personal endings. In the following paradigm the morphemes are {yap-} 'do', {-mIš-} 'must have' and {-Im} 'I', {-sIn} 'you', {-lEr-} plural, etc.

	S	Pl.
1.	yapmíšım	yapmíšız
2.	yapmíššın	yapmíššınız
3.	yapmíš	yapmíšlár

Note that in the third person plural the stress is apparently irregularly on /lár/. The difficulty is resolved, however, when we realize that the third person morpheme is {-ϕ}, Corresponding to {-Im}, {-sIn}, etc., and that it is this that has "pulled" the stress to a seemingly abnormal position. On the principle of ex nihilo nihil fit and its converse ex aliquo aliquid fit it will have to be admitted that zero is as real as any of the morphemes with phonemic shape. This zero morpheme has only a zero alternant, but it is an aliquid.

If a zero morpheme can exist, zero allomorphs must presumably, a fortiori, be posited. In English the situation is not entirely clear-cut, as the evidence from 'the sheep is', 'the sheep are' is rendered somewhat arguable by such forms as 'the people are' and 'the peoples are'. Here we have either two different 'people' morphemes, or two different plural morphemes, or one plural morpheme and nothing. The situation is clearer in Latin. Here the perfective morpheme {-wI-} has the

phonemic shapes -wi-~-ui-~-si-~-i- as in amāvit, tenuit, scrīpsit, ēgit. But corresponding to these are alternants with abnormal stress, as amát, fumát. Not only is the stress on the last syllable, instead of the expected penult, but the vowels should be short before {-t}, as {amA:-} plus {-s} and {-t} gives amās and amat. However, if we assume {amA:-ϕ-t}, with -ϕ- an alternant of {-wI-}, these difficulties are resolved. The 'formalism of the calculus' is preserved.

It is convenient, moreover, to posit a zero morphophoneme. In Italian there exist many pairs with plus juncture and internal close juncture, such as chi sa /kì+sá/ and chissà /kissá/ 'who knows', va bene /và+bɛ́ne/ and vabbene /vabbɛ́ne/ 'goes well', da mi /dá+mi/ and dámmi /dámmi/, etc. Hall[8], in as meaningless a piece of notation as I have ever witnessed, writes /ˣ/ as following the forms /ki/, /va/, /da/, etc. What we have here is obviously a zero morphophoneme, so the forms are {kiϕ}, {vaϕ}, {daϕ}, with ϕ having the phoneme shapes of /s/, /b/, /m/, etc. when followed by close juncture. In French the so-called 'hâche aspirée', conceived of by the French as "something" (not entirely due to the writing system, since 'hâche non-aspirée' is also written h), is a zero morphophoneme. The forms written le héro and l'héroine represent {lə} and {ϕero}, {eroinə} respectively.

The question can now be raised, can zero exist on a level lower than morphophonemic? Morphophonemes are made up of phonemes. What, then, is the gap among morphophonemic alternants, as in Italian /kiˣ/, /vaˣ/ and /daˣ/? The concept of a zero phoneme is avoided by most linguists and they are doubtless right. There is nothing in the pattern congruity of any phonemic system that demands a zero. Linguistic structure points on any level require contrast for their definition and zero does not so contrast. The gap among morphophonemic alternants could be designated as ϕ and the morphemic and morphophonemic zero as ϕ_2, but, at the risk of conflicting with a somewhat tenuous argument of Hoenigswald[9], I have chosen to call the former nil.

The first propostition of Peano's system of mathematical logic was: zero is a number[10]. Translated into linguistic terms

this could read: zero is an entity. That it is a fiction or convention (or even a 'convenience') will be admitted, provided that everything else on the same structural level be so admitted. This should not be too great a conceptual strain on linguists, who have talked of fictions and arbitrariness before. Those who say that zero is really nothing, are basing their argument on common sense, the weakest of all possible theoretical foundations The 'arbitrary conventions' are the structure points of reality and they exist only to preserve the 'formalism in the calculus', that is, the form of a language system. As every linguist knows.

Footnotes

The substance of this paper was delivered before the Thirteenth University of Kentucky Foreign Language Conference, April 30, 1960.

1. E.g., see a somewhat inconclusive discussion of this topic by H. A. Gleason, Richard S. Harrell and Einar Haugen in the Report of the Tenth Annual Round Table Meeting on Linguistics and Language Studies, ed. by Richard S. Harrell, Georgetown University, 1959.
2. Leonard Bloomfield, Language (1933), p. 161.
3. Bernard Bloch, "English verb inflection," Lang. 23 (1947) 2.3.
4. Charles F. Hockett, "Problems of morphemic analysis," Lang. 23 (1947), fn. 37.
5. Floyd G. Lounsbury, Oneida Verb Morphology, Yale University Publications in Anthropology No. 48 (1953), 1.1.5.
6. H. Hankel, Theorie der komplexen Zahlensysteme, quoted in Friedrich Waismann, Introduction to Mathematical Thinking, p. 39.
7. Waismann, ibid., p. 27.
8. Robert A. Hall, Jr., Descriptive Italian Grammar, Cornell Romance Studies, vol. II (1948) 1.622 - 1.623.
9. Henry M. Hoenigswald, "Some uses of nothing," Lang. 35 (1959), 409-420. Hoenigswald is principally concerned with a diachronic nil, but has these remarks to make on synchronic nil (ibid., p. 418):

   'The synchronic properties of nil are in part rather dubious. Nil is of course unrecognizable; whether or not it is something physically associated with a transitional glide or with an empty morph is beside the point as soon as we leave mere phones or morphs behind. Nil is therefore arbitrary; it has

to be, since our criterion for setting it up comes from outside: from another corpus, from history. And yet, or rather because of that, nil has one very definite asset: it has privileges of occurrence.'

10. Cf. Waismann, ibid., p. 69.

THE CLASSIFICATION OF ENGLISH SUBSTITUTE WORDS

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Reference is made in the following discussion to these example sentences:

There is a clock on this red book.
It is an alarm clock.
There is a clock on this red book.
There is a clock on that blue book, too.
This clock on the red book is an alarm clock.
That clock on the blue book is an alarm clock, too.
There is some dust on this clock.
There is some dust on that clock, too.
Both clocks are alarm clocks.
Each of the clocks is an alarm clock.
How many of the clocks are wall clocks?
Neither clock (Neither of them) is a wall clock.
How many of the clocks are travel clocks?
Only one of the two clocks is a travel clock.
There is a clock on this red book.
May I take it off the red book?
This clock on the red book has run down;
that clock on the blue book has run down, too.
Do you want me to wind them up for you?
No, I want Mary to wind them up for me.
This clock is my sister's clock.
That clock is my sister's clock, too.
Can you see the alarm clock (the alarm clock referred to is on the red book)?
This clock stopped running yesterday.
That clock stopped running yesterday, too.
This clock stopped running yesterday morning.
That clock stopped running yesterday afternoon.
This clock is ten years old.
Is it really ten years old?
It was a very expensive clock. That a very expensive clock should look tinny is surprising.
There is a clock on this red book.

What is that? That is a clock, too.
I hope that these clocks that I've been referring to have served their purpose.
John likes clocks as much as I like clocks.
He also owns clocks such as those which have just been described.
John uses clocks in his talks, too.

In his very important book The Structure of English,[1] Charles C. Fries divides English words into four large "classes" and fifteen small "groups." His four large classes correspond roughly to the traditional nouns, verbs, adjectives, and adverbs; his fifteen small groups make up what he calls the "function words" of English. In discussing the differences between these two kinds of words, he points out that "in the four large classes, the lexical meanings of the separate words are rather clearly separable from the structural meanings of the arrangements in which these words appear," while "in the words of the fifteen groups it is usually difficult if not impossible to indicate a lexical meaning apart from the structural meaning which these words signal" (106). But he gives as the most important difference, and "the basis for separating the words of these fifteen groups from the others and for calling them 'function words,' . . .the fact that in order to respond to certain structural signals one must know these words as items" (106).

And yet, in spite of so explicit a statement of the basis for calling "function words" by the name, a person reading The Structure of English gets the impression that, to Fries, the collocation "to function as" means merely "to fit the same position as." Certainly, on the basis of Fries's definition, the personal pronouns should be called function words. They "occur very frequently"--and it would be "difficult if not impossible to indicate a lexical meaning" for any one of them apart from some specific context. Even Fries himself admits that "the list of these substitutes is short and the units are probably also learned as separate items belonging in this list" (119). But they fit the same positions in Fries's sentence frames as his Class 1 words--and so, in spite of any other function they may have, he assigns them to his first form-class.

In their American English in Its Cultural Setting, Donald J. Lloyd and Harry R. Warfel follow Fries's lead in classifying the personal pronouns as "a kind of noun" since "whatever a noun can do in the utterance, one of these words can also do."[2] W. Nelson Francis, in his Structure of American English, goes even further and calls them "a small group of nouns."[3]

But to classify the personal pronouns as nouns is to fail to distinguish between analysis on the morphological level and analysis on the syntactic level. The subject of an English clause, for example, is typically a nominal construction made up of a noun as head plus the modifiers of that noun, as in the sentence 'This clock on the red book is an alarm clock,' the subject of which is 'this clock on the red book.' Now the modifier of a construction, even of an endocentric construction, is not necessarily of the same type as the modifier of the head of that construction. A pre-modifier of an individual noun, for example, is regularly an adjective, as in 'this particular clock'; but a pre-modifier of a whole nominal construction is regularly an adverb, as in 'particularly this clock'--or even 'particularly this clock on the red book.' It often happens, however, that nouns occur without any modifiers: this is especially true of proper nouns and mass nouns, and even of the plural forms of count nouns. Such nouns then function simultaneously on both levels--that is, both as nouns and as nominals. In the sentence 'I like clocks,' for example, the word 'clocks' is at the same time a noun--the plural form of the count noun 'clock'--and a nominal, the object of the verb 'like.' As a noun, it might have been preceded by an adjective, as in 'I like particular clocks' (that is, not all clocks); as a nominal it might have been preceded by an adverb, as in 'I like all timepieces, particularly clocks.' Compare also 'That's real Scotch' with 'Is that really Scotch?,' and 'This bread is made of special wheat' with 'Almost every kind of grain, especially wheat, can be used in the making of bread.' A determiner like 'his' may be inserted in each of these examples; in every instance, however, it would have to be inserted before the adjective, but after the adverb: for example, 'his particular clocks,' but 'particularly his clocks'; 'his real Scotch,' but 'really his Scotch'; 'his special wheat,' but 'especially his wheat.'

Now a personal pronoun functions as a substitute word on the syntactic level only. It substitutes for an entire nominal construction, not for the noun head of the construction. It is only when an unmodified noun functions also as a nominal that a personal pronoun seems to be able to do "whatever a noun can do." But actually the personal pronoun substitutes for the noun as nominal, not for the noun itself. The pronoun 'her,' for example, may substitute for 'Mary' in 'I like Mary': 'I like her.' But it is seldom, if ever, modified by a preceding adjective, although it may be modified by a preceding adverb; that is to say, 'special her' does not occur in normal speech, although 'especially her' does--as in 'I like all girls, especially her.' Similarly, 'particular these' does not occur, but 'particularly these' does. When the substitute word 'these' replaces a nominal beginning with the determiner 'these' (as in 'I like these' instead of 'I like these clocks'), the substitute word 'these' functions as a nominal: it does not function as the noun that James Sledd claims it to be in his Short Introduction to English Grammar.[4]

As a matter of fact, there are only four pronouns in English that regularly take the place of 'nouns' (as opposed to nominals). These are the substitute words 'one$_1$,' with its plural 'ones,' and (less commonly) 'other,' with its plural 'others'--as in ('This clock on the red book is an alarm clock,') 'That one on the blue book is an alarm clock, too' (for 'That clock on the blue book . . .').

Leonard Bloomfield devotes an entire chapter in his encyclopedic Language to a discussion of substitution. He defines a 'substitute' as "a linguistic form or grammatical feature which, under certain conventional circumstances, replaces any one of a class of linguistic forms."[5] "The substitute," he continues, "replaces only forms of a certain class, which we may call the domain of the substitute; thus, the domain of the substitute 'I' is the English form-class of substantive expressions." But here even Bloomfield seems to be confusing levels. Some substitute words--such as 'one$_1$' and 'ones'--do indeed substitute for form.classes, on the morphological level; but others--such as the personal pronouns--substitute for constructions, on the syntactic level. The domain of the sub-

stitute word 'one$_1$' is the form-class of singular-count nouns; but the domain of 'I' is that kind of nominal construction that functions as the subject of a clause.

Charles F. Hockett, who also devotes a whole chapter to substitutes, in his Course in Modern Linguistics, takes exception to Bloomfield's use of 'replaces' as a synonym for 'substitutes for.' He says: "Bloomfield's term 'replace' is unfortunate: it does not imply that the 'replaced' phrase might occur instead of 'I,' but only that 'I' in the given situation denotes exactly what the singular noun or noun phrase 'replaced' would denote if it were used."[6] Later Hockett cites the example 'Jane and Bill were going together, but she couldn't wait for him,' and comments that "we know that 'Jane' [that is, the word 'Jane' in the first clause] is the antecedent of 'she' because the domain of 'she' includes 'Jane' and does not include any other form in the sentence" (256). From this it would appear that in the two sentences 'There is a clock on this red book.' 'It is an alarm clock,' Hockett would say that the domain of the substitute word 'it' includes 'a clock.'

But Hockett seems to be confusing "substitution" with "reference." The pronoun 'it' refers to 'a clock,' but it does not substitute for 'a clock.' The domain of the substitute word 'it' is usually an already indentified nominal beginning with a definite determiner like 'the' or 'that'--not an unidentified (or indefinite) nominal beginning with 'a' or 'an.' The substitute for an unidentified nominal is commonly 'one$_2$,' as in the sentence ('There is a clock on this red book.') 'There is one on that blue book, too,' which is merely a shorter way of saying 'There is a clock on that blue book, too.' The domain of this substitute word 'one$_2$' is truly the indefinite nominal 'a clock,' which it replaces. (It will be noted that this 'one' is a different morpheme from the 'one' which substitutes for a noun.) But to find the domain of 'it' in the example quoted earlier, one must first replace 'it' with the words for which it probably substitutes. Such a replacement would produce a sentence like ('There is a clock on this red book.') 'The clock on this red book is an alarm clock.' The pronoun 'it,' then, substitutes for the definite nominal 'the clock on this red book.' It now becomes evident that a substitute word does indeed "replace" a form or construc-

tion that might occur instead of it, in the very position it occupies; and that particular kind of form-class or construction-class is its domain, not some "antecedent" mentioned in a preceding clause.

Since the primary function of a substitute word is to replace that particular kind of form-class or construction-class which is its domain, it would appear that one method for classifying substitute words might be in accordance with their various domains. Such a classification will result in subdividing the substitute words into quite a few sub-groups.

One widespread type of substitution in English--a type represented by a large number of substitute words--is that which Bloomfield and Hockett discuss under the heading "zero-anaphora." According to Bloomfield, the infinitive after the 'to' in 'I haven't seen it, but hope to' is replaced by an anaphoric zero-feature, as is also the infinitive after the 'can' in 'I'll come if I can (252).' Another way of analyzing these sentences, however, would be to call the words 'to' and 'can' substitute words which replace constructions introduced by homonymous non-substitute words. Thus the demonstrative pronoun 'this' may serve as a substitute for the construction 'this clock on the red book' beginning with the determiner 'this.' Similarly, the demonstrative 'that' may substitute for 'that clock on the blue book'; the indefinite substitute 'some' may replace the construction 'some dust'; the inclusive substitute 'both' may replace the construction 'both clocks'; the distributive substitute 'each' may replace 'each clock' or 'each of the clocks' ('each' differs from 'every' in this respect); the negative substitute 'neither' may replace 'neither clock' or 'neither of the clocks'; and so on. Even the numerals 'two' and 'one$_3$' may substitute for the constructions 'two clocks' and 'one of the two (clocks)' in the sentence 'Only one of the two clocks is a travel clock.' (It will be noted that this 'one' is still a third morpheme, homonymous with--but distinct from--'one$_1$' and 'one$_2$.' It is usually distinguishable from the other two by having either primary or secondary--as opposed to tertiary--stress.)

Quite a few prepositions may also function as substitute

words of this type, as in 'May I take it off?' for 'May I take it off the red book?' And almost any auxiliary may substitute for a predicate construction in which it is the first word, like the second 'has' in the sentence 'This clock on the red book has run down'; 'that clock on the blue book has run down, too.' (It should be noted that the substitute 'has' in 'that clock on the blue book has, too,' replaces not only the verbal construction 'has run' but the entire predicate 'has run down.' Compare 'John can ride a bicycle without using his hands, and Tom can, too,' where the second 'can' replaces the entire predicate 'can ride a bicycle without using his hands.') In the same way, the verb 'to be' regularly substitutes for a predicate that is similar to the predicate of a preceding clause or sentence, as in ('How many of the clocks are wall clocks?') 'Neither is' (for 'Neither is a wall clock'). And the infinitive marker 'to' regularly substitutes, not for an infinitive expression only, as Bloomfield suggests, but for an infinitive plus its complement: that is, for a construction in which 'to' is the first word, as in 'I want Mary to' (for 'I want Mary to wind them up for me').

Many substitute words, of course, do not replace constructions which they themselves introduce. Personal pronouns like 'it,' as has already been demonstrated, usually substitute for constructions beginning with definite determiners; the substitute word 'one$_2$' usually replaces a construction beginning with an indefinite determiner and having a singular count noun as its head (as in 'There is one on that blue book, too,' for 'There is a clock . . .'). Possessive adjectives substitute for nominals ending in ''s' or 's'': for example, ('This clock is my sister's clock.') 'That clock is her clock, too.'[7] Some substitute words even have special, related forms to replace constructions which they themselves introduce: instead of 'her clock' in the last example, one might say 'hers.' Similarly, the negative substitute 'none' sometimes replaces constructions beginning with 'no,' as in 'John has no money'; 'Tom has none, either' (although a more common substitute for such a construction would probably be 'not' . . . 'any', as in 'Tom doesn't have any, either').

An included clause following a nominal and identifying (or, less often, merely describing) that nominal, regularly begins with a substitute word called a relative, as in 'Can you see the

Alarm clock which' (or 'that') 'is on the red book'? And when the object of a verb or of a preposition is the same as the subject of the clause in which it occurs, this object is frequently replaced by a kind of substitute word called a reflexive, as in 'Tom dresses himself every morning' in place of 'Tom dresses Tom'. The use of a special substitute expression--the reciprocal expression 'each other'--makes it possible for one clause to substitute for two clauses under certain conditions, as in the sentence 'This clock and that clock' (or 'The two clocks') 'face each other' (for 'This clock faces that one, and that clock faces this one').

When the whole predicate of one clause is essentially the same as the predicate of the preceding clause, an auxiliary in the second clause may substitute for the whole predicate, as has already been demonstrated. But when there is no auxiliary, one of the three substitute words 'do', 'does', and 'did' may be used instead, as in ('This clock stopped running yesterday'.) 'That clock did, too'. It will be noted, however, that if an adberbial at the end of the second clause differs from the corresponding adverbial in the first clause--as, for example, 'yesterday afternoon' from 'yesterday morning'--then 'do', 'does', or 'did' often substitutes for only the verb, and a substitute word like 'so' replaces the complement and any other items common to both clauses: for example, ('This clock stopped running yesterday morning'.) 'That clock did so yesterday afternoon'. The substitute word 'so' is also used after verbs like 'think' and 'hope' in place of a complement which merely repeats some idea already expressed, as in ('Can you go with us?') 'I think so.'

To replace so-called adverbial expressions of degree, English has two substitute adverbs: 'that' (not to be confused with either the determiner 'that' or the pronoun 'that') and 'so'--as in ('This clock is ten years old.') 'Is it really that old?' or 'Is it really so old?' To replace descriptive noun-modifiers, English has the substitute expressions 'such' and 'such a', as in ('It was a very expensive clock.') 'That such a clock should look tinny is surprising.' To replace the adverbial expression of manner 'in this way' (or 'like this'), English has the little-used substitute 'thus'.

A second glance at the example sentences will show that all but one of the substitute words discussed so far have been used anaphorically--that is, they have been used to replace words or constructions suggested by similar words or constructions in preceding clauses or sentences. But some substitute words are not always anaphoric. The demonstrative pronouns 'this' and 'that', for example, may be accompanied by gestures which obviate the need for a following noun. The words they replace are supplied by the practical situation within whose framework they are uttered. Otto Jespersen calls words used in this way--words "whose meaning differs according to the situation"--'shifters'.[8] The demonstrative pronouns, therefore, may be either anaphoric substitutes or shifters. Substitutes which function only as shifters are the personal pronouns 'I', 'we', and 'you' (and their other forms), which differ in this respect from the anaphoric substitutes 'he', 'she', 'it', and 'they', as E. Benveniste points out in his essay in the volume entitled For Roman Jakobson.[9]

Still other substitute-shifters are the place-substitutes 'here' and 'there' (as in 'There is a clock here', 'There is one there, too'), and the time-substitutes 'ago', 'now', and 'long' (as in 'He was here an hour ago, but he isn't here now'). The object of a preposition is typically a nominal construction, as in 'for a long time'; 'long' substitutes for such a construction in the phrase 'before long'. The time-substitute 'then', however, is usually used anaphorically, not as a shifter: it replaces a time-expression already mentioned. (It will be noted that not every expression of place is adverbial. In the sentence 'This clock on the red book is an alarm clock', for example, the prepositional phrase of place 'on the red book' is an adjectival modifying 'clock'. The fact that the substitute word 'here' may replace this phrase raised the question whether 'here' in the nominal construction 'this book here' is adverbial, as is often claimed, or adjectival.)

Some substitute words are used both as anaphoric substitutes and as shifters, like the demonstratives already mentioned. Thus 'such a clock' may mean either 'a clock such as has just been described' or 'a clock like the one I am looking at now.' In the example 'Is it really so old?' quoted above, 'so' replaces

the expression 'ten years' ('old') suggested by an identical expression in the preceding sentence. But one may also use 'so' as a shifter, as in 'That an expensive clock should look so tinny is surprising', where 'so' substitutes for some such expression as 'as (tinny) as this clock looks to me now.'

Indefinite pronouns like 'somebody', 'anyone', 'something' - and their negative counterparts 'nobody', 'no one', 'nothing' --are neither anaphoric substitutes nor shifters. It could be argued that they are not really substitute words at all, although both Bloomfield and Hockett class them as such. Perhaps a valid line of reasoning for including them among the substitutes would go somewhat as follows: In the sentence 'There is something in my hand,' 'something' is a substitute word because it substitutes for "either 'a' or 'b' or 'c' or 'd' . . ." and so on through the names of all the objects that might conceivably be in my hand; in the sentence 'There is nothing in my hand,' 'nothing' is a substitute word because it substitutes for 'neither 'a' nor 'b' nor 'c' nor 'd' . . .' (or, more simply, for 'not even one thing'); and so on for the other indefinite pronouns. Similarly, the independent substitutes 'somewhere' and 'anywhere' may be said to substitute for 'here or there or there or there . . .' (where each 'there' signifies a different place). Other independent substitutes are 'what' (as in 'say what you will') and the words ending in '-ever,' like 'whatever', 'whoever', 'wherever', and so forth. 'What' (or 'whatever'), for example, may be said to substitute for an expression like 'anything that': 'Do what (ever) you want to' then replaces 'Do anything that you want to.'

Still another group of independent substitutes is made up of the so-called impersonal pronouns, which have, if anything, even less justification for being called substitutes than words like 'somebody' and 'anything.' It is often impossible to state exactly what an impersonal pronoun substitutes for. Perhaps in a sentence like 'I see they've fixed the window,' the impersonal pronoun 'they' may be thought of as substituting for 'somebody, I don't know who' or for 'one or more of the persons responsible for fixing windows around here'; similarly, the 'you' in 'Can you smoke in here?' may be thought of as substituting for 'any person who wants to smoke'; and the 'one'

in 'One must learn to be patient in this world' may be thought of as substituting for 'any person--no matter who,' (It will be noted that this 'one' differs from the other three in always being used without either a pre-modifier or a post-modifier.) But it is difficult to see how the 'it' in 'It's raining' substitutes for any expression whatsoever, Bloomfield to the contrary notwithstanding. This 'it' is more probably just a 'filler' for the subject position, without substituting for anything, in the same way that the 'is' in 'John is a teacher' is a 'filler' for the verbal position.

There is, however, one use of the impersonal 'it' where it does function as a substitute word. In this anticipatory use, 'it' is made the subject of a sentence in order to replace an included clause or an infinitive or gerund construction, which then shifts to final position--as in 'It is surprising that such a clock should look so tinny.' But 'it' is not the only anticipatory substitute word. Another one--one which ranks among the most frequently used of all substitute words--is the anticipatory substitute 'there,' which replaces the subject of a clause when the subject is less definite than a following adverbial. (The subject then shifts to complement position.) A native speaker of English, for example, would probably re-phrase the sentence 'A clock is on this red book' as 'There is a clock on this red book.' (This 'there' is not an adverb, as Bloomfield claims (254); nor is the subject of this sentence the nominal 'a clock,' as Sledd suggests (143). The subject of this sentence is the substitute word 'there,' just as 'it' is the subject in 'It is time to go.' Compare 'It is time to go, isn't it?' with 'There is a clock on this red book, isn't there?'[10])

The interrogatives may also be classed as anticipatory substitutes, on the grounds that, in the questions which they introduce, they substitute for words or constructions which are to appear in the answers. Thus, in the question 'What is that?', the interrogative 'what' anticipates--and substitutes for--the nominal 'a clock' in the answer 'That' (or 'It') 'is a clock, too.'

There are, finally, three rather remarkable groups of substitutes, each comprising only one or two members, which pattern like no others.

The first of these is a zero-substitute, which regularly replaces the subordinator 'that' in any but sentence-initial position, as in 'I hope these clocks have served their purpose' for 'I hope that these clocks have served their purpose.' A similar zero-substitute regularly replaces the relative 'that' except when it is the subject of its own clause, as in 'I hope these clocks I've been referring to have served their purpose' for 'I hope these clocks that I've been referring to have served their purpose.' (Unlike most instances of so-called ellipsis, the zero-substitutes in these examples do not replace words suggested by similar words in preceding clauses.)

There are two substitutes in the second group: 'as' and 'than.' Both of these words may function simultaneously as subordinators and as substitutes for either a subject and a verb or a verb and its complement, as in 'John speaks Italian as fluently as' (or 'more fluently than') 'English,' and in 'John likes clocks as much as (or 'even more than') 'I'. In the first example, the second 'as' (and the 'than') substitute for the subject and verb 'John speaks' in addition to introducing the subordinate clause; in the second example, the second 'as' (and the 'than') substitute for the verb 'likes' and its complement 'clocks' in addition to introducing the subordinate clause: 'John likes clocks as well as I like clocks.' 'As' may also function simultaneously as a preposition relative, and the subject of its own clause, as in 'clocks such as have just been described,' for 'clocks such as those which have just been described. ('As' and 'than' probably do not function as substitutes in the dialects of all English speakers.)

The third group is made up of two substitutes, which are perhaps the most versatile of them all. These are the substitute expressions 'how about' and 'what about.' In a question immediately succeeding a statement or another question, one of these substitutes may replace all of the preceding sentence except the part corresponding to the word or construction following it. Thus, after a statement like 'John uses clocks in his talks, too,' the substitute question 'How about books?' may replace the full question 'Does John (also) use books in his talks?,' while the substitute question 'How about Mary?' may replace the full question 'Does Mary (also) use clocks in her talks?,'

and the substitute question 'How about in his daily teaching'?, may replace the full question 'Does John (also) use clocks in his daily teaching'?

There is, then, a great variety of these substitute words and expressions, by means of which sentences that would otherwise be unwieldy are reduced to manageable proportions. In every conversation and in every piece of writing, words and expressions like these occur again and again, as substitutes for many of the different kinds of form-classes and (more importantly) construction-classes of English.

Footnotes

1. New York: Harcourt, Brace and Company, 1952.
2. New York: Alfred A. Knopf, 1956, p. 243.
3. New York: The Ronald Press Company, 1958, p. 252.
4. Chicago: Scott, Foresman and Company, 1959, p. 79.
5. New York: Henry Holt and Company, 1933, p. 247.
6. New York: The Macmillan Company, 1958, p. 255.
7. It will be noted that the inflections for possession are unusual in being syntactic rather than morphological. The ''s' in 'my sister's clock,' for example, converts not just the single word 'sister' but the whole construction 'my sister' into a modifier of 'clock,' (In 'Mary's clock,' the ''s' is added to 'Mary' as a nominal, not as a noun; cf. the discussion of the personal pronouns, above.) But even though ''s' and 's'' are endings for constructions, not for words, they are always joined to individual words in writing. This occasionally results in an expression like 'the Queen of England's husband,' which cannot be analyzed on the morphological level. Such expressions cause little difficulty 'in speech': young children who have not yet been inhabited by the grammar of written English have no trouble in making up sentences like 'Have you seen the man who was here yesterday's hat'? See also the discussion in Archibald A. Hill, Introduction to Linguistic Structures. New York: Harcourt, Brace and Company, 1958, pp. 253-254.
8. Language: Its Nature, Development and Origin, London: George Allen & Unwin Ltd., 1922, p. 123. See also Roman Jakobson, Shifters, Verbal Categories, and the Russian verb. Harvard University, 1957, p. 2.

9. "La nature de pronoms," in For Roman Jakobson, ed. Morris Halle et al. The Hague: Mouton & Co., 1956, pp. 34-37.
10. See also P. A. Erades, "Points of Modern English Syntax," English Studies, 36, 42-45. (1955).

WHOSE SCIENCE?

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The layman who dips a toe in linguistic literature may be struck by the persistence of the construction *our science*. Following are attestations (among which I include an occurrence of *notre science*):

> Discussion of the fundamentals of our science seems to consist one half of obvious truisms, and one half of metaphysics; this is characteristic of matters which form no real part of a subject; . . (Leonard Bloomfield, 1926)[1]

> Any utterance can be fully described in terms of lexical and grammatical forms; we must remember only that the meanings cannot be defined in terms of our science.[2] (Leonard Bloomfield, 1933)[2]

> Our science should not be a mere storehouse of facts and figures. Our experience should not be confined to mere ear- and eye- and hand-experience.[3] (Viggo Brondal, 1936)[3]

> In the meantime it seems wise for linguists not to subscribe to any of the schools which have hitherto divided the psyechologists. George Lane has just published a brief account of how psychologic doctrines and doctrinaires have misled our science.[4] (Edgar H. Sturtevant, 1947)[4]

> When it [a theory of Louis Hjelmslev] is finally published in full form, it will probably prove an important contribution to the advancement of our science.[5] (André Martinet, 1949)[5]

> This session was held in response to the motion presented at the Toronto meeting in June, 1955 "urging Canadian universities to give more time to linguistic studies" and train scholars who can make significant contributions to our science.[6] (JCLA, 1956)

> . . . as yet not all linguists would agree that our science is

in a position to measure or effectively describe all the sub-phonemic differences.[7] (Raven I. McDavid, 1956)[7]

In the present state of our science it seems imperative to choose certain important subjects, within synchronic and diachronic linguistics, which may lend themselves, more easily than most others, to make known new results and new methods.[8] (Eva Sivertsen, 1956)[8]

L'enseignement de Saussure est un événement qui ne termine pas une période de l'histoire de notre science, maisqui en commence une.[9] (L. J. Prieto, 1958)

It must be said outright that no matter how divergent the meanings of some of the derivatives quoted, these etymologies are part and parcel of the ground-stock of our science, while Zvegincev's treatment may give rise to the impression that he questions them on semantic grounds.[10] (H. Galton, 1959)[10]

Note the analogous construction our . . . field in the following: "Let us hope for the future that in our growing and flourishing field, on an international scale, a greater congruence may be reached on the plane of expression . . ."[11] (Eric P. Hamp, 1957)[11]

The foregoing quotations span a period of thirty-three years. Also to be noted is the high professional standing of nearly all the identified authors and of the publications in which the passage appeared. It is established, I think, that the construction our science (notre science) has long been a fixture of some professional writing on linguistics.

The construction presents problems that illustrate (once more!) difficulties of semantic study. Of first concern will be the reference of our and science, respectively. Then there is the problem of the affective values and attitudinal implications of the whole construction. What does the construction imply of the scientists' feelings about, and attitudes toward, themselves, their field of competence, and the rest of the world? Finally, we shall ask: Toward what end is this phrase, big with the in-

definable, introduced into the discourse of scientists? In short we shall be concerned with the referential and extra-referential content of the construction--with sense, feeling, tone, and intention (in I. A. Richards' formulation[12]).

Certain other considerations are pertinent. It is premised here that semantic analysis can best follow a distinction somewhat parallel to the langue-parole duality. On the langue side, lexical items possess a widely apprehended core of meaning[13] ("meaning" here signifying the sum of referentiality and extra-referentiality) that is apart from novel figurative extension. It is this core that lexicographers aim to identify for the lexical list of a language. As regards parole aspects, the semantic core is first in various degrees subject to alteration in employment, alteration that may derive from features of context, from novel figurative extension, from imperfect knowledge of the core, or from other causes. (Obviously in analysis it will not be possible always to maintain distinctions among these factors.) Then too the meaning is subject to these modifying factors in the mind of the hearer or reader.

To return to our science: In terms of the foregoing concepts, indications of langue-lexicography, parole-employment, and parole-apprehension are that the science is linguistics and that the "we" who possess this science are linguists.[14] It seems unnecessary to say more about referential aspects.

With regard to extra-referentiality we are first concerned with the second area of inquiry--the communicator's meaning. Needed are statements about feeling, tone, and intention from persons who use the construction. It is to be hoped that some writers will find occasion to expand it.

There remains the third area--the extra-referential content that readers may apprehend. Impressions to be given will relate to feeling, tone, and intention, taken together. To the unbriefed reader, then, our science may suggest restrictedness and defensiveness. He may think he detects in the construction an "in-group's" arrogation to itself of an intellectual discipline--which in its ultimate usufructs he thought to be in the universal domain. And especially as it is among some linguists that the

locution has had currency, he may wonder whether they do not feel a parallel with the title of the well-known poem of Klopstock--whether "our science," like "Unsere Sprache" is not being proclaimed as "gesondert, ungemischt und nur sich selber gleich." Since it appears that practitioners of some other sciences also use the construction, the reader may think to be in the way of a metalinguistic aperçu, to wit: the possibility of a unified scientific view of being is diminished to a degree by the mutual exclusiveness (among sciences) implied in the construction our science.[15]

Possibilities under the second rubric--defensiveness--are not necessarily distinct from those under the first. Not long after the beginning of a new era--the Saussurean--of linguistic study, some practitioners may feel constrained to set up what I believe is called, militarily, a tight defensive perimeter. The construction our science may evoke an image of a brave little knot of beleaguered pioneers. The construction then would be a kind of bugle call--a tremulous summons to unity and a defiance of unbelievers.

It will be remembered that the foregoing exegesis represents elements of content only as they may be apprehended by the reader. It leaves out of consideration the second area of inquiry--the writer's extra-referential purport.

Problems of the extra-referential content of our science lead to the general question of such content in the class of constructions in which a pronoun stands in attributive relationship to a noun. Henceforth in these notes I shall confine attention to feeling and tone; intention seems to be less accessible to inquiry, and as Richards suggests (183) it is best considered separately. Feeling and tone together, then, I shall term extra-referential dynamism.

Now it is evident that extra-referential effects may depend on features of context. A matrix containing a pronoun of, say, set II (in Archibald A. Hill's description[16]) may be wholly or nearly free of extra-referential dynamism, as in some sentences in this paper; e.g., we shall ask, we shall be concerned with; likewise in the following (which seem to make the point,

even without lengthier quotation): our knowledge of the linguistics of Central America (Lg. 1.96), our family of languages (Lg. 12. 26), and our symbols (Lg. 13.125). It may even be asked Whether there is any justification in fixing on a particular construction (as, our science) as the effective dynamic factor. Such procedure does seem to me to be justified, since (to my reading, it is understood) the quotations embodying our science would be neutral in feeling and tone if in place of our science we found, say, linguistics or the science. The phenomenon of extra-referential dynamism is, then, describable as follows: the context contains potentialities that are polarized by a particular construction.

The phenomenon is demonstrable in constructions that are analagous to our science. I proceed to show the polarizing force of constructions in which (1) our is in attributive relationship with a noun other than science and (2) some other pronoun stands likewise to science or to some other noun.

A classic example under the first of these heads is Stephen Decatur's "Our country! In her intercourse with foreign nations, may she always be in the right; but our country, right or wrong."[17] In the foregoing, surely a good part of the distinctive feeling and tone is polarized in our country. An attestation of our President can also be noticed here: "Even our President cannot say that he 'worked with Marshal Zhukov,' but instead declares that 'Marshal Zhukov and I operated together very closely.'"[18] The view that our country and our President are polarizing entities in the foregoing quotations may be corroborated by the circumstance that our country and our President, taken in isolation, possess extra-referential dynamism that is absent from the country and the President.

It is perhaps pronouns of sets I and II that have the highest potential of extra-referential dynamism. Following are examples containing a pronoun of set I:

I want to protect my men and I want to protect my piers.[19]

I've got to help my people.[20]

It may not be amiss to present another example in French that has come to hand: "Mon peuple est bien persuadé de cette verité . . . ."[21]

Obviously in none of the foregoing examples is extra-referential content identical in character with the corresponding content in our science. But it may be granted that the constructions involving personal pronouns do manifest distinctive extra-referential dynamism.

Pronouns of sets III, IV, V, and VII can also be used to polarize affective content and particular tone. Set VI (it-its) does not seem to have this potential. For sets III and VII witness the following excerpts from the discourse of one or another of three Britishers who were interviewed about a change in golf rules that was made by the United States Golf Association: "What you people are doing is reducing the premium on accurate play . . . . It was the U. S. G. A. which made the decision for your people. I understand the pressure came from Californians who wanted to make the game easier for their people."[22]

The following passage shows, to my reading, the pronoun his (from set IV) used once with high extra-referential dynamism (his people) and three times with more nearly neutral feeling and tone (his ideas, "his" people, and his Jewish father's son):

> Increasingly as his ideas developed and the movement spread, he saw himself in the image of Moses, a great but scorned man who, despite neglect, led his people to the promised land (strikingly enough, in Freud's view, not "his" people, for in Moses and Monotheism Freud pictures Moses as an Egyptian nobleman who "adopted" the Jews--much as Freud in his fantasies did not care to be his Jewish father's son).[23]

Nor will the presence of marked extra-referential dynamism be questioned, I think, in the inscription on a sign reported from the Dominican Republic: "Trujillo, your people adore you."[24]

These citations can be rounded out with one more from a linguist. Surely it is not without awareness of the possibilities of extra-referential dynamism that Edward Sapir used their science when he emphasized the wider bearings of linguistics: "It is peculiarly important that linguists, who are often accused, and accused justly, of failure to look beyond pretty patterns of their subject matter, should become aware of what their science may mean for the interpretation of human conduct in general."[25]

For the purposes of this discussion, I. A. Richards' semantic structuring has been adopted, involving sense (reference), feeling, tone, and intention. In the specimens cited, which involve our science and other constructions, each of which consists of a pronoun in attributive relationship to a noun, identification of reference does not seem to be troublesome. But distinctive extra-referential effects seem often to be associated with the construction, and these effects are more difficult to assess. Any attempt to describe these effects (and any other aspects of meaning) should take into account langue-lexicography, parole-employment, and parole-apprehension.

Particular attention was directed to feeling and tone; the sum of those features was termed extra-referential dynamism. The view is taken that when extra-referential dynamism is associated with a given construction, the dynamism may derive partly from context; the construction polarizes potentialities in the context.

Further inquiry might be directed to (1) the identification of other polarizing constructions; (2) the identification and classification of features of context that lend themselves to polarization; (3) the identification of the extra-referential potentialities of the foregoing constructions and features.

The citation above of a couple of examples in French and one presumably translated from Spanish raises the question whether study along the indicated lines would result in generalizations which, if not "panchronistic," would at least be applicable to related languages. ("Unsere Sprache," by the way, is evidence of the phenomenon in German.)

Would the suggested inquiry lead but to the mentalistic morass? Perhaps not--though quite surely Leonard Bloomfield would take a pessimistic view of the possibilities. Yet the problem that is examined in these paragraphs come to attention precisely because Bloomfield, among others, has used, in scientific contexts, a construction--our science--that fairly vibrates with extra-referential dynamism and is of debatable intention.

Footnotes

1. "A Set of Postulates for the Science of Language," Language, 2.153-154.
2. Language (New York, 1945 [1933]), p. 167.
3. In Proceedings of the Second International Congress of Phonetic Sciences (1936), quoted by Ernst A. Cassirer, "Structuralism in Modern Linguistics," Word, 1.117.
4. An Introduction to Linguistic Science (New Haven, etc., 1948 [1947]), p. 5.
5. "About Structural Sketches," Word, 5.14.
6. "Editorial," Journal of the Canadian Linguistic Association, 2.39.
7. "Social Differences in Pronunciation: a Problem in Methodology," General Linguistics, 2.16.
8. "Eighth International Congress of Linguists," Word, 11.495.
9. Review, Word, 14.384.
10. Review, Archivum Linguisticum, 11.71.
11. A Glossary of American Technical Linguistic Usage (Antwerp), p. 6.
12. Practical Criticism (New York, 1929), pp. 179 ff. and 353 ff.
13. I use the word core in preference to, say, nucleus because the latter is already used in the description of morphology and stress; besides, nuclear has phonetic application. Nor do I employ core of meaning, core-meaning, or semantic core in the sense of Bloomfield's normal or central meaning (Language, p. 149). The latter signifies nonfigurative meaning, whereas under "core" I subsume both literal and figurative aspects that are of established character.
14. At this point a distributional problem takes shape: Is the construction found in the professional literature of other sciences? A physicist tells me that he has not encountered it but that he recognizes "the attitude." A geologist states that it is found in professional writings on geology. I submit

the following occurrence on the part of geneticists: "Let us struggle to keep our science, in all its ramifications, connections, extensions and even speculations, in the light of day" (H. J. Muller, "Genetics in the Scheme of Things," address to the 8th International Conference of Genetics, 1948; quoted by Charlotte Haldane, Truth Will Out [New York, 1950], p. 334).

15. The educational side-effects of mutual exclusiveness among sciences are another metalinguistic implication that can be noticed here. Observe the following: "Scholarly caution can freeze the intellectual and imaginative faculties. The most uncommon kind of teaching--but the most important--is what might be called relational: seeing the connection between things, throwing bridges from one area of knowledge to another." (David Boroff, "American Colleges: What Their Catalogues Never Tell You," Harper's Magazine, April, 1960, p. 37)
16. Introduction to Linguistic Structures (New York, 1958), pp. 145 ff. Set II comprises we, us, our, ours.
17. The Oxford Dictionary of Quotations, 2nd ed. (London, etc., 1954 [1953], p. 169.
18. Review by Daniel J. Boorstin, New York Times Book Review, April 26, 1959, p. 5/3.
19. A labor leader quoted, "Brooklyn Dock Walkout Halted By Anastasio," New York Herald Tribune, April 4, 1959, Sec. 2, p. 12/2.
20. An American lady of Irish descent explaining to her husband her purchase of a quantity of Irish linens at Shannon airport; quoted by Art Buchwald, "The Good American," New York Herald Tribune, Nov. 19, 1959, p. 21/2.
21. Louis XVIII quoted by Carl Abel, "On the Discrimination of Synonyms," Linguistic Essays (London, 1882), p. 153.
22. Art Buchwald, "No Stroke of Genius," New York Herald Tribune, Dec. 31, 1959, p. 13/2.
23. Review by David Riesman, Progressive, Sept., 1959, p. 47/1.
24. Edward C. Burks, "Trujillo's Land Has Many Faces," New York Times, Feb. 21, 1960, p. 4/1.
25. Language 5.214 (1929); quoted by Harold Basilius, "Neo-Humboldtian Ethnolinguistics," Word 8.95 (1952).

BORROWING: ITS EFFECT AS A MECHANISM OF LINGUISTIC CHANGE IN AMERICAN SICILIAN

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Among the dialects at present spoken by Italians and Italo-Americans living in the United States, Sicilian seems to be one of the most resistant to extinction. Groups of Sicilian-speaking people can be found in many of the large and medium-sized communities of the northern United States. The group with which this author has done most of his field work lives in and around Binghamton, Johnson City, and Endicott, New York, three closely connected upstate communities whose total population numbers about 120,000.[1] The purpose of this paper is to discuss the effects of borrowings from the variety of American English spoken in those communities on the Sicilian dialect, whose speakers first arrived there about 70 years ago.[2]

Phonology: This variety of Sicilian has five vowel phonemes /i e a o u/ all of which may occur with the suprasegmental phoneme of stress /ˊ/. Excluding lexical items borrowed brom English, only three of these vowel phonemes occur unstressed: /i a u/. However, since American English borrowings turn up with unstressed /o/, e.g., /okké/ 'O.K.!', /noccétti/[3] 'not yet!', /woritéŋki/ 'water tank', the symmetry of the vowel system is disturbed. This redistribution of one back vowel, /o/, so that it occurs unstressed is not accompanied by a parallel redistribution of one front vowel, /e/, to balance the system. American English items with /æ /, /e/ or /ej/ turn up with /e/ whenever the vowel is stressed in the American Sicilian item, e.g., American English 'bad' (/bǽd/) > /béddi/. In borrowings which are reshaped so that these vowels occur in unstressed positions, the vowel in American Sicilian is /i/, e.g., American English 'backhouse' (/bǽk+haus/) > /bikkáusu/ (the stress pattern of this word being one of high frequency of occurrence in American Sicilian.) In view of this, we must realign the unstressed vowels in the following way:

i u
o
a

with /e/ missing.

One new consonant cluster has been introduced: /kl/, as in /klénsi/ 'cleanser' and /sántaklósi/ 'Santa Claus'. American English /s/ + stop is reshaped to /š/ + stop, the distribution of /s/ being such that it does not occur before stops in American Sicilian: 'store' > /štóru/, 'Crisco' > /kríšku/, etc. /nš/ is reshaped to /nč/: 'insurance man' > /nčunsiménni/, as /š/ does not occur after nasals in American Sicilian. American English /ks/ is reshaped to /kVsV/ (V = vowel): /lúkisi/ < 'Lux soap', /bókisa/ < 'box', /tékisi/ < 'tax'.

Canonical Forms: The introduction of many items with original consonant cluster /ks/ mentioned above has caused an increase in the frequency of occurrence of the paroxytonic accentual pattern (´ ˘ ˘) since the inserting of vowels after both members of the cluster gives rise to two more syllables. Moreover, the distribution of segmental phonemes in American Sicilian is such that no utterance may end with a consonant. The vowel phoneme /i/ has taken on the role of a type of derivative 'supporting' vowel in many of these borrowings from American English in as much as it is used to avoid consonant final utterances: /béddi/ 'bad', /nájsi/ 'nice', /kékki/ 'cake and so on.

Morphophonemics: Although /o/ now occurs unstressed, the morphophonemic replacement of /ó/ and /é/ by unstressed /u/ and /i/ in stress-shifting derivatives and inflected verb forms remains a regular, phonologically conditioned alternation. Therefore, on the model of /pénsu/ 'I think' ~ /pinsári/ 'to think' there is the American English loan /akkéššu/ 'I cash' ~ /akkiššári/ 'to cash', and on the model of /kómudu/ 'comfortable' ~ /kumuditá/ 'commodity' there is /špóncu/[3] 'sponge' ~ /špuncúsu/ 'spongey'. Also 'shanty' provides the basis for the stem *šént- to which is affixed the diminutive affix -ínu (which involves replacement of the stressed stem vowel by an unstressed vowel) with the result: /šintínu/.

Noun Inflection: There are two classes of noun stems in American Sicilian: 1. those which are inflected and 2. those which are uninflected. Noun stems of class 1 are marked in the singular with either -u (masculine) or -a (feminine): /fóku/ (m) 'fire', /níku/ (m) 'little', /fíggia/ (f) 'daughter', /addína/ (f) 'hen', etc. Noun stems of class 2 invariably end with -i: /núši/ (f) 'nut', /dúši/ (m or f) 'sweet', /káni/ (m) 'dog', etc. (Gen-

der is operative only in the singular of both types).

All new nouns based on borrowing from American English are placed in one of these two classes:[4]

Class 1: /péllu/ (m) 'pail', /búkku/ (m) 'book', /stóru/ (m) 'store', /bókisa/ (f) 'box', /šábbula/(f) 'shovel'.

Class 2: /ménni/ (m) 'man', /nájsi/ (m or f) 'nice', /béddi/ (m or f) "bad', /sántaklósi/ (m) 'Santa Claus.'

At present, there is no evidence of the creation of any new stem classes triggered by borrowings from American English.

Verb Inflection: This last statement is also applicable to verb stem classes. That is to say, all American English loans have been adjusted so that they fit into already existent verb stem patterns. To be more exact, of the three stem classes of verbs (characterized by stem vowels -a- as in /kantári/ 'to sing', -i- as in /sapíri/ 'to know' and unstressed -i- as in /dórmiri/ 'to sleep'), all American English loans are placed in stem class -a-: púšš- 'push' as in /puššári/ 'to push', péšt- 'paste' as in /pištári/ 'to paste', špújl- 'spoil' as in /špujlári/ 'to spoil', štápp- 'stop' as in /štappári/ 'to stop', fájn- 'find' as in /fajnári/ 'to find', etc. Furthermore, no divergencies from the norm appear in the inflectional processes of these new stems. They are inflected exactly like the regular verbs of this class.

Idiom Formation: American English borrowing has been very active in providing the basis for the formation of many new one-stem idioms and in the providing of elements for the creation of many new longer idioms.

Long lists of one-stem idioms based on borrowings from American English could be easily drawn up. It is noteworthy however, that any such list would consist totally of contentives. To the best of this writer's knowledge, there have been no new functors created on the basis of American English borrowings.

1. Nouns. Lexical items denoting elements of American

culture which are alien to old-world Sicilian culture enter quite freely and one even finds many original lexical items either replaced or accompanied by borrowings from American English. Along side of /monió́rdini/ "money order', /woríténki/ 'watertank', /ištikékki/ 'yeast-cake', /lúkkisi/ 'Lux soap' which are names of items not having exact parallels in the old-world culture, one finds /búkku/ 'book', /šríttu/ 'street', /péllu/ 'pail' replacing or accompanying the older forms: /líbru/, /kassíru/, /kátu/.

2. Verbs. Besides the new verb stems mentioned above (púšš-, péšt-, etc.), some new parasynthetic stems have been created by the affixation of a^- (^= symbol indicating gemination of next consonant): a^+lakk- 'lock' + á (stem vowel) + ri (infinitive ending)→ /allakkári/ 'to lock', a^+ nakk- 'knock' + á + ri /annakkári/ 'to knock at the door'. Here again, we are reminded that this is not a new process but an application of an older method of verb stem formation evident in indigenous verb forms such as: /aǧǧurnári/ 'to be daylight' ← a^ + gurn- 'day' + a + ri.

3. Adverbs. /nékisivíkki/ 'next week' and /nékisimónci/ 'next month' are new adverbial forms existing concurrently with the older forms: /lasimánakibbéni/ and /lumísikibbéni/.

4. Minor Sentences. (defined for American Sicilian as including all complete utterances not built by a predicative construction). Many additions from American English can be cited: /okké/ 'O.K.', /maríakrissimíssa/ 'Merry Christmas', /kurmóni/ 'Good Morning', /warijuwánni/ 'What do you want?', /juwánništénni/ 'Do you understand?', /noccétti/ 'not yet'. There is a problem concerning whether some of these new forms are monomorphemic or consist of sequences of separable morphemic units. In the cases of /maríakrissimíssa/ and /juwánništénni/, /maría/ and /šténni/ are recognizable as phonemic sequences representing other morphemes in the language: /maría/ 'Mary', /sténni/ 'he or she hangs clothing'. However, since the meaning of the longer sequences is quite indeducible from the meanings of the smaller parts, the only solution seems to be that they do not consist of sequences of separable morphemic units and they are one-stemmed idioms.

Syntactical Construction Types: Sicilian has both the attribute-head and the head-attribute centered construction types: /béddu|ómu/ 'handsome man' (attribute-head), /ómu|gránni/ 'old man' (head-attribute). Although constructions built by the head-attribute type are more frequent, the number of composite forms built by the attribute-head type is increasing with the number of adjective stems formed on borrowings from American English. That is to say, all of these new adjectives occupy the attributive position before the head: /nájsi/ 'nice' in /nájsi|boja/ 'nice boy', /nájsi|gélla/ 'nice girl'; /láccu/ 'lots of' in /láccu|travággiu/ 'lots of work'; /béddi/ 'bad' in /béddi|bója/ 'bad boy', /béddi|gélla/ 'bad girl', etc.

Semantics: There have been some very interesting semantic shifts brought about by the reshaping of American English loans so that they are homophonous with indigenous Sicilian forms. For example, American English 'breakfast' has been reshaped to /bédda-fésta/ which is identical with the sequence /bédda/ 'beautiful'+/fésta/ 'feast' but which has the meaning 'American-type breakfast'. Thus a new idiom is formed, /béddafésta/, contrasting with an older idiom, /lukaffé/ (lit. 'the coffee'), which has the meaning of a simpler morning repast.

The eternal problem of how many morphemes can be represented by one phonemic sequence arises again in the reshaping of 'corner' and 'corn' (the vegetable) so that they are homophonous with Sicilian /kórnu/ 'horn'. Rather than assign the morpheme /kórnu/ two new meanings (those of 'corner' and 'corn'), this writer feels that three separate morphemes should be recognized. A justification of this point of view would rest on the basis of the divergent ranges of meaning of the three items. It is true that there are certain semantic reverberations between /kórnu/ 'horn' and /kórnu/ 'corner'. Both share at least one feature of meaning, i.e., 'a curving or bending'. However, since they are quite distant in their other features of meaning, a recognition of separate, homophonous morphemes seems to be justified.

Another interesting case of reshaping is /lévamánu/ from 'Never mind;. Sicilian already had the phonemic sequences /léva/ 'take off' or 'remove' and /mánu/ 'hand', but the sequence /lévamánu/ with the meaning 'Never mind' is new and a

non-sequitur from its constituent parts. Therefore, the only alternative seems to be to recognize, as in the case of the centered construction /béddafésta/, the formation of a new idiom triggered by the reshaping of a borrowing from American English.

Conclusions and Evaluation

The mechanism of borrowing from American English has brought about the following changes:

1. The redistribution of one vowel phoneme, /o/, and the formation of one new consonant cluster: /kl/,
2. an increase in the frequency of occurrence of antipenultimately stressed words,
3. the formation of many new contentive stems and minor sentences,
4. an increase in the frequency of occurrence of grammatical forms built by the attribute-head construction,
5. the semantic shifts mentioned above.

Borrowing has not caused:

1. the creation of any new functor stems,
2. new grammatical patterns,
3. any major changes in the phonology or morphophonemics.

In conclusion, one might say that borrowing has been chiefly a mechanism of quantitative change with only a few qualitative effects in the central phonological subsystem of the language. No changes were observed in the peripheral phonetic subsystem of American Sicilian which could be attributed to the influence of American English.

Footnotes

1. Figure based on official 1950 Census.
2. The term American Sicilian is thereby restricted to the language of those speakers of Sicilian living in and around Binghamton, Johnson City, and Endicott, New York. Throughout the United States, there are many groups of Italo-Americans speaking one or another variety of Americanized

Italian. There has even arisen a kind of "standardized-dialectal Italian" which is used in communication between the smaller indigenous groups. It must be made clear that these other types are not under investigation here.

3. In this paper, the symbol c is used to represent the phoneme which has [ts] as an allophone. The symbol č represents the phoneme which has [tš] as an allophone.
4. Stems based on borrowings are normally given the gender assignment of the older stems they replace. See Idiom Formation for examples.

A LINGUISTIC ANOMALY

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In the English of some parts of the South and Southwestern portions of the United States, a vowel contrast parallel to that defined by the opposition of sit and set does not exist before nasals. Accordingly, such pairs as Jim and gem, pin and pen, etc. are homophonic. Functionally, the vowel of Jim, etc. is the archiphoneme of the contrast defined by the opposition of sit and set. Phonetically, the vowel of Jim, etc. is approximately identifiable with the vowel of sit rather than the vowel of set.

In the dialect in question, this lack of contrast between Jim and gem, etc. seems deeply rooted in the speakers' behavior pattern of reacting to auditory stimuli (i.e. 'phonemic system'), and not merely a matter of the phonemic shape of given lexical items. The fundamental nature of this lack of the sit-set difference before nasals for the dialect in question is easily documented. Dr. Raleigh Morgan, Jr. of the Center for Applied Linguistics records an illustrative incident from his own experience, (Linguistic Reporter, 1.4, 1959) and the author knows of speakers, both linguistically trained, from as geographically distant places as Nashville, Tennessee and Fort Worth, Texas, who attest to their original inability, before learning something of phonetics, even to hear such distinctions as pin-pen, etc. in the English of speakers from other dialects than their own.

But for speakers of the dialect in question, lemme (let me) does not rime with gimme (give me) and contrasts minimally with a possible adjectival derivation limby from limb. There is no question of lemme having some sort of transitional phenomenon ('juncture') not found in gimme; the difference is clearly a vowel contrast. The semantic nature of lemme is, moreover, such that it must be assumed to be a fundamental part of the dialect, acquired orally in early childhood. The vowel of lemme must be analyzed phonemically as /e/, comparable to the vowel of set, in contrast with the /i/ of gimme, which is comparable to the vowel of sit. These phenomena contradict the assumption of many linguists that a phonemic contrast of a given type in a

given set of morphemes is necessarily generalizable to other morphemes.

The analytical crux implicit in the phenomena described is perhaps resolvable on a psycho-statistical basis. The assumption of a historical stage in which pin-pen, etc. are already homophonic, but in which /t/ has not yet disappeared from an assumable */létmiy/, reconstructs a dialect which is consistent in lacking a distinction parallel to that of sit and set before nasals. In such a schema, the current form /lémiy/ would be both recent and isolated. That the contrast of /i/ versus /e/ before nasals was not generalizable, despite gimme and lemme, allows the speculation that a certain critical minimum number of morphemes embodying a particular type of contrast may be necessary before phonological generalization occurs.

Two questions are offered for further research: Is the linguistic situation described in this paper truly an 'anomaly', or do such marginal, non-generalized phenomena occur widely and normally in languages? The author suspects that such phenomena are both normal and widespread in all languages. And finally, under what circumstances does a set of linguistic phenomena learned by rote crystallize into an extrapolatable pattern?